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05)/4)/	323-4 (1953). These two Soviet scientists are entirely new this is the	25X1A
25X1X	first time ever seen them mentioned; or that ever read any publication of theirs. The work described in their article is an amplification or a modification of the method of making organic paraphite	25X1X 25X1X
	which Arbuzov has used in the USSR. In other words.	25X1X
	work of Kuskov and Gradis is a new modification of that method. Organic phosphites are used as intermediates in the making of other phosphorous compounds. Here again, these organic phosphites possess large molecules and are useful in making insecticides, but would not be useful in making such compounds as nerve gas because they are not readily volatile.	
5.	Because the three Soviet articles mentioned above supplement the earlier publications along these lines, translated and digested the aforesaid publications in the order in which they are hereinabove listed, as follows:	25X1X 25X1X
	A series of aryl-substituted thiophosphates were prepd. All were less active	
	insecticides that Parathior. The compounds were pread by the coupling of	
	(RO) 2PSC1 with Arona. Generally increase of the size of the OR radical decreased	
	the insecticidal action. Replacement of NO2 by GNB group greatly reduced insecti-	
	cidal activity. Introduction of balogens slightly raised insecticidal activity.	
	The preps were made in PhCl suspension with a few inspa of pyridine as catalyst	
	at 110-30°. The following were prepare 24% (Eto) ₂ PB(CC ₆ H ₄ OMe-o), b ₈ 170-4°, d ₂₀ 1.1672, r _D 1.5990; m-analog, 56%, b _{0.02} 97°, d ₂₀ 1.1483, r _D 1.5050; (Eto) ₂ PB-	
	(OC6H,OFt-m), 21%, bg170-80°, d ₂₀ 1.1288, m _D 201.5045; its Pro analog, 26%, bg170-	
	80°, d ₂₀ 1.1020, r _D ²⁰ 1.5038; the Buo analog, 17%, b _{0.35} 140-50°, d ₂₀ 1.1001,	
	1.5028; its Phongo araing, 25%, b _{0.05} 140-5°, d ₂₀ 1.1645, n _D ²⁰ 1.5620; (Pro) ₂ P8-	
	(OC ₆ H ₄ OM =-c), 2 ^h / ₅ , 3 _{0.05} 117, d ₂₀ 1.1288, 20 1.520; the m-emalog, 18%, b ₃ 130-	
	50°, d ₂₀ 1.1106, m 1.4942: 154 m. Eto emalog, 18%, h _{0.05} 110-8°, d ₂₀ 1.0949,	
	1.4920; its m-Pro atalie, 25%; b _{0.35} 120-46°, d ₂₀ 1.0754, z _D .5040; (Eto) ₂ PS-	
	(OC ₆ H ₁ OMe-p), 46%, b _{0.1} 117.22 , d ₂₀ 1.1910, r _D 1.5180; the CEt analog, 23%,	
	b _{0.1} 135-40°, d ₂₀ 1.1400, m _D ²⁰ 1.5140; its PrO analog, 22%, b _{0.3} 136, d ₂₀ 1.1086,	
	201.5080; its BuO analog, 46%, to .2153, a201.0905, r201.5082; (EtQ)2P8-	
	(OC ₆ H ₃ (OEt)B=-4,2), 20%, t _{0.02} =42-50°, d ₂₀ 1.3596, r _D 2.5410; the 2-Cl analog,	
	11%, $b_{0.15}$ 110-26°, d_{20} 1.2391, $b_{0.15}^{20}$ 1.5285; (E-0) ₂ PS($\infty_6 H_4 cns-p$), 10% , $b_{0.04}$ 130°,	
	d 1.2121, =201.5510; (MeO) 2FS (OC H ₄ OEt-m), 18%, b _{0.02} 100-7°, d ₂₀ 1.1970,	
	n 1.5280; (Pro) 2PS (OC 6 n OM 2), 48%, h 0.07 124°, d 20 1.1201. r 20 1.5100; its Eto	
	unalog, 52%, b _{0.025} 112-20, d ²⁰ 1.0956, m _D 1.5070; the Pro analog, 10%,	

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 $\begin{array}{l} {}^{b}_{0.2}{}^{148-50}{}^{\circ}, \, {\rm d}_{20}{}^{1.0221}, \, {\rm n}_{\rm T}^{20}{}^{1.4970}; \, {\rm its} \, \, {\rm BuO \,\, analog}, \, 30\%, \, {\rm b}_{0.025}{}^{112-20}{}^{\circ}, \, {\rm d}_{20}{}^{1.0082}, \\ {\rm n}_{\rm D}^{20}{}^{1.4950}; \, ({\rm Pro})_{2}{}^{\rm PS}({\rm CC}_{6}{}^{\rm H}_{3}({\rm OEt}){\rm Br-4,2}), \, 35\%, \, {\rm b}_{0.05}{}^{136-40}{}^{\circ}, \, {\rm d}_{20}{}^{1.3113}, \, {\rm n}_{\rm D}^{20}{}^{1.5290}; \\ {\rm its} \, \, 2\text{-Cl \,\, analog}, \, 19\%, \, {\rm b}_{0.05}{}^{121-6}{}^{\circ}, \, {\rm d}_{20}{}^{1.1883}, \, {\rm n}_{\rm D}^{20}{}^{1.5285}. \end{array}$

 ${\tt ArSiCl}_3$ react with AlCl $_3$ forming apparently ${\tt SiCl}_4$ and ${\tt ArAlCl}_2$; if the reaction mixture is treated with PCl3, the latter substance reacts, yielding ArPCl2 and AlCl₃. If PCl₅ is the reagent, the product is ArPCl_{μ} and AlCl₃ in the form of a complex. With POCl, the complex yields ArPCl, and AlCl, POCl; treatment with SO, converts ArPCl₄ to ArPCCl₂, thus affording a convenient method of prepn of various aryl organophosphorus compounds. Heating 100 g PhSiCl₃, 69.3 g AlCl₃ and 65 g PCl₃ 2 hrs at 80°, followed by distn of SiCl₄ under reduced pressure (94.4%), and slow addn to the viscous residue of 85.8 g POCL gave a granular ppt of AlCl3, POCL complex. This was sepd and washed with petr ether, the washings combined with the filtrate gave 83.4% PhPCl₂, b_{e7}140-1°, d₂₀1.3180. A mixture of 20 5 PhSiCl and 13.9 $_{\rm G}$ AlCl $_{\rm 3}$ heated 10 hrs to 70-80 $^{\rm o}$, then freed of SiCl $_{\rm 4}$ in vacuo, (87% obtained), was treated slowly with 13 g PCl3; the miquid mass was kept 1 hr at 80-90°, then was treated with 17.2 g POCl₂; the above procedure of isolation gave 76% PhPCl2, b56140°. Heating 10 g Ph2SiCl2, 11.6 g AlCl3, and 11 g PCl3 3 hrs at 80° , followed by distn of ${\rm SiCl}_{4}(92.7\%)$, and treatment with 14.3 g ${\rm POCl}_{3}$ gave 80.4% PhPcl₂, b_{55} 138-9°. p-clc₆H₄Sicl₃ (10 g), 6 g Alcl₃ and 5.7 g PCl₃ heated 2 hrs at 80° , freed of $SiCl_{ij}$ by distn (90.7%), and treated with 7 g $POCl_{3}$ gave 6.6 g (77.4%) p-ClC₆H_LFCl₂, b 252-3°, d₂₀1.4203. Similarly p-BrC₆H_LBiCl₃ gave 72.6% p-BrC6H, PCl2, b 2700, d201.6801; this added to H20 gave p-BrC6H4FO2H2, m 142.3° (from dil EtOH). p-MeC6H4SiCl3 similarly gave 85.3% p-MeC6H4PCl2, b 243-4°, m 24.5°. To 30.2 g AlCl $_3$ and 39.4 g PCl $_5$ was added with stirring 40 g PhSiCl₃ and the mixture was kept 2 hrs at 80-5° (2 layers form); after distn of SiCl, under reduced pressure (89.6% recovered), the cooled residue was treated slowly with 38.2 g POCl and kept 1 hr at 70°, after which the mass was wild with 40 ml $CCl_{l_{\downarrow}}$ and treated with SO_2 until heat evolution ceased. The liq portion was cepd and distd yielding, after removal of SOCl2, 4 g PhSiCl3, b 193-9°, and

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19.6 g (18.8 g pure; 45.6%) PhPOCl₂, b 250-9° (crude), b 256-8° (pure), d²⁰₂₀l.3700. Heating 30 g PhSiCl₃ and 20.7 g AlCl₃ h hrs at 80°, followed by cooling to 30° and addn of 68.7 g POCl₃, heating 1 hr at 80°, removal of low boiling materials in vacuo and distn of the residue, gave 14.2 g SiCl₄, 31.2 g POCl₃ and intermediate fractions. The semisolid residue was extd with petr ether, and the combined exts on distn gave 5 g POCl₃ and 10 g PhSiCl₃, leaving a residue which reacted vigorously with H₂O. Thus POCl₃ in contrast to PCl₅ does not react with PhAlCl₂.

Heating (EtO) POH with various alcs in the presence of the corresponding RONa only transesterification takes place, yielding (RO) POH. Yields of 85% are common with only a small amount of RONa being necessary, although the use of even molar quantities of the catalyst fails to change the course of the reaction. Thus 0.3 mole ROR containing 0.2 g Na was mixed with 13.8 g (EtO) POH and heated under a simple fractionating column until the vapor temp was maintained at 90-5°, gave the desired (RO) POH. Thus were prepd (PrO) POH, 86%, b₁70-2°; (BuO) POH, 84.5%, b₁₀115°; (iso-BuO) POH, 87%, b₁₃111-13°; (iso-Amo) POH, 88%, b₃99-100°; (C₆H₁₁0) POH, 70%, b₃152-3°, the latter prepn of the cyclohexyl deriv required bath temp 160-90°; the others gave good results at somewhat lower temps. The results are quite contrary to those claimed by M Janczak or M Janczakowna (Rozniki Chem 6, 110 (1926), and 4, 180 (1924)) who reported formation of Et₂O and (EtO)P(O) (H)ONa. The prepn of (EtO) P and (EtO)P(O) (OH)ONa reported by J is also in doubt.

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